

Remarks

Claims 20-27 and 93-96 were pending in the present application before entrance of the present Amendment. Claims 20, 23, 25, 27, 94, and 96 have been rejected, and claims 21, 22, 24, 26, 93, and 95 are withdrawn from consideration at this time.

Claim 20 has been amended. Support for the amendment to claim 20 can be found on page 4, lines 5-10, and page 56, lines 14-20. Applicant submits that no new matter has been added to the application by these amendments.

Applicant respectfully requests reexamination and reconsideration of the case based on the amended claims. Each of the rejections levied in the Office Action is addressed individually below.

I. Rejection under 35 U.S.C. § 102. Claims 20 and 23 stand rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by Clary (WO 98/45708, published October 15, 1998). The Examiner maintains that Clary “teaches a method of identifying one or more compounds that modulate the function of a RPTK (such as Ror2) in a cell.” The Examiner contends that “even though Clary is silent on any connection between Ror family members and bone metabolism, it would have been inherent that the identified agent is a ‘bone-related agent’ because Clary teaches the same method steps as the claimed invention.” Solely in order to further prosecution, Applicant has amended claim 20 to recite the additional step of “identifying the agent as having bone-related activity if a decrease or an increase in Ror activity is detected.” Applicant submits that since Clary is silent on any connection between Ror family members and bone metabolism (as the Examiner admits), Clary cannot possibly teach or even suggest such a step. Therefore, Applicant requests that the rejection be removed because the cited art does not teach all aspects of the claimed invention. *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565, 24 USPQ2d 1321, 1326 (Fed.Cir. 1992).

II. Rejection under 35 U.S.C. § 103. Claims 25 and 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Clary (WO 98/45708) in view of Oishi *et al.* (*Genes to Cells*, 4:41-56, 1999). Applicant respectfully submits that Oishi *et al.* does not remedy the deficiency of Clary, that is, neither reference teaches or suggests any connection between Ror family

members and bone metabolism. Therefore, even when the two cited references are taken in combination, they cannot render the claimed invention obvious because neither one teaches or suggests the step of “identifying the agent as having bone-related activity if a decrease or an increase in Ror activity is detected.” Applicant request that the rejection be removed.

In addition, claims 20, 23, 25, 27, 94, and 96 have been rejected under § 103 as being unpatentable over Godowski *et al.* (U.S. Patent 5,766,863) in view of Oishi *et al.* The Examiner states that Godowski *et al.* teaches an assay for measuring activation of a tyrosine kinase receptor of interest. The Examiner admits that Godowski *et al.* does not teach Ror2. The Examiner cites Oishi *et al.* for the teaching that both Ror1 and Ror2 are receptor tyrosine kinases that exhibit autophosphorylation activity. Although this may be true, neither reference teaches or suggests any connection between an Ror family member and bone metabolism. Therefore, even when these references are combined, they do not teach the claimed invention as discussed above. Applicant respectfully requests that the rejection be removed.

III. Rejection under 35 U.S.C. § 112, first paragraph. Claim 94 stands rejected by the Examiner under § 112, first paragraph, for lack of written description. The Examiner argues that the specification as originally filed does not provide support for the phrase “wild type Ror2.” Applicant disagrees.

From the very first sentence of the “Summary of the Invention,” it would be clear to one of ordinary skill in the art reading the specification that the inventors had possession of the idea of using wild type Ror2 polypeptide in the claimed methods as of the time of filing. For example, the first sentence of the “Summary of the Invention” mentions “Ror polypeptide or homologues or derivatives or fragments or variants or mutants thereof.” This phraseology clearly implies that the term “Ror polypeptide” means wild type Ror polypeptide; otherwise, the terms “homologues”, “derivatives”, “fragments”, “variants”, and “mutants” would have no meaning. This phraseology is used throughout the specification. *See, e.g.*, page 2, lines 30-31; page 3, lines 2-3; page 15, lines 18-19; page 16, lines 26-27; page 19, lines 13-14; page 19, lines 20-21; and original claims 1, 12, 15, 37, 44, 47-49, 52-54, 76, and 79.

Furthermore, the sequence of wild type Ror2 protein is given in SEQ ID NO: 6. The definition of the terms “fragment”, “analog”, and “derivative” also refers to the polypeptide

sequence of SEQ ID NO: 6 further supporting that SEQ ID NO: 6 is the wild type sequence of Ror2 polypeptide, and therefore, the inventors had possession of the claimed invention as of the time of filing. *See* page 28, line 27, to page 29, line 9.

In addition, as pointed out before, support for wild type Ror2 can be found in Example 3, entitled “Human Ror1 and Ror2 Cloning and Expression”. *See* page 86, lines 1-25. Example 3 describes the cloning of wild type Ror2. As noted in the Example, the Ror2 clone obtained differed from the sequence described in U.S. Patent 5,843,749 by two nucleotides. One (C2088T) was a silent mutation, and therefore, it did not lead to any change in the amino acid sequence of the cloned Ror2 polypeptide. The other (*i.e.*, G2455A) changed valine 819 to isoleucine. Applicant submits that the wild type Ror2 polypeptide includes an isoleucine residue at position 819 rather than a valine residue because mouse, monkey, and rat Ror2 polypeptide all have an isoleucine residue at position 819. There seems to be an error in the sequence for Ror2 listed in U.S. Patent 5,843,749.

Applicant requests that the rejection be removed since the idea of using wild type Ror2 polypeptide in the claimed invention was clearly envisioned by the inventors at the time of filing of the present application.

In view of the forgoing remarks, Applicant respectfully submits that the present case is now in condition for allowance. A Notice to that effect is requested.

Please charge any fees that may be required for the processing of this Response, or credit any overpayments, to our Deposit Account Number 03-1721.

Respectfully submitted,

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Date: November 7, 2007

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